

MARKOV, N.

Seven-year plan of the development of textile industry and the
problems of technical standardization. Sots.trud 4 no.3:85-90
Mr '59. (MIRA 12:4)

(Textile industry--Standards)

MARKOV, N.; BELYAYEV, M.

Mutual help between collectives. Sots.trud 5 no.2:98-102 F
'60. (MIRA 13:6)

1. Zaveduyushchiy otdelom truda i zarabotnoy platy TSentral'nogo
komiteta profsoyuza rabochikh tekstil'noy i legkoy promyshlennosti
(for Markov). 2. Zamestitel' zaveduyushchego otdelom truda i
zarabotnoy platy TSentral'nogo komiteta profsoyuza rabochikh
tekstil'noy i legkoy promyshlennosti (for Belyayev).
(Textile industry)
(Socialist competition)

MARKOV, N.

Collectivism in life and work. Sots. trud. 5 no.12:109-116 p '60.
(MIRA 14:6)

1. Zaveduyushchiy otdelom truda i zarabotnoy platy Tsentral'nogo
komiteta profsoyuza rabochikh tekstil'noy i legkoy promyshlennosti.
(Tiraspol' —Clothing industry)
(Socialist competition)

MARKOV, N.P.; ISURIN, B.I.

New fabrics manufactured by the Zheliabov Mills. Tekst.prom.
20 no.10:12-15 0'60. (MIRA 13:11)

1. Direktor Leningradskoy fabрики imeni Zhelyabova (for Markov).
 2. Zaveduyushchiy proizvodstvom Leningradskoy fabрики imeni Zhelyabova (for Isurin).
- (Textile fabrics)

MARKOV, N.

Improve the establishment of technical standards in textile enterprises. Sots. trud 6 no.12:80-85 D :61. (MIRA 14.11)
(Textile industry—Production standards)

Markov, N. G.

✓ 1005* (Russian.) Hydraulic Abrasive Blasting of Metal Parts. Abrasivno-shidkostnaya obrabotka detalet. N. G. Markov, F. V. Khilakov, and M. M. Trukhachev. *Vestnik Mashinostroyeniya*, v. 36, no. 9, Sept. 1958, p. 56-57.

Describes a machine designed for treating metallic surfaces with liquids carrying an abrasive material. The treatment is claimed to be free from the usual defects of other machining methods, and to improve the fatigue strength and corrosion resistance of the part treated.

Markov 3

of

GARIB'YAN, R.B. ; MARKOV, N.G.

[Human anatomy and physiology; textbook for teachers' institutes]
Anatomiia i fiziologiia cheleveka; uchebnik dlia pedagogicheskikh
uchilishch. Izd.2, ispr. Moskva, Gos.uchebno-pedagog.izd-vo
Ministerstva prosveshcheniia SSSR, 1953. 246 p. (MLRA 9:1)
(ANATOMY, HUMAN) (PHYSIOLOGY)

GARIB'YAN, Ruben Bakhshiyevich; MARKOV, N.G.

[Human anatomy and physiology; a textbook for the 8th grade in
secondary schools] Anatomia i fiziologiya cheloveka; uchebnik
dlya 8 klassa srednei shkoly. Izd.4. Moskva, Gos.uchebno-pedagog.
izd-vo, 1959. 206 p. (MIRA 13:7)
(ANATOMY, HUMAN) (PHYSIOLOGY)

KABANOV, Aleksandr Nikolayevich. Prinimal uchastiye FARFEL', V.S.,
prof.; MARKOV, N.G., red.; MAKHOVA, N.N., tekhn.red.

[Physiology of man and animals; the nervous system and
the motor apparatus] Fiziologiya cheloveka i zhivotnykh;
nervnaya sistema i dvigatel'nyi apparat. Uchebnik dlia
fakul'tetov estestvoznaniia pedagogicheskikh institutov.
Izd.2., ispr. i dop. Moskva, Uchpedgiz, 1963. 327 p.
(MIRA 17:2)

LEVINA, Roza Yefimovna; MARKOV, N.G., red.[deceased]

[Variety and evolution of the forms of plant reproduction] Mnogoobrazie i evoliutsiia form razmnozheniia rastenii. Izd.2., ispr. Moskva, Prosveshcheniia, 1964.
65 p. (MIRA 18:5)

MARKOV, N I

11(1),26(1)

PHASE I BOOK EXPLOITATION

SOV/2391

Mikhaylov, Aleksandr Ivanovich, Georgiy Mikhaylovich Gorbunov,
Vladimir Vladimirovich Borisov, Leonid Aleksandrovich
Kvasnikov, and Nikolay Ivanovich Markov

Rabochiy protsess i raschet kamer sgoraniya gazoturbinykh
dvigateley (The Operation and Calculation of Combustion
Chambers of Gas-Turbine Engines) Moscow, Oborongiz, 1959.
284 p. (Series: Moscow. Aviatsionnyy institut imeni
Sergo Ordzhonikidze. Trudy, vyp. 106) Errata slip inserted.
3,610 copies printed.

Ed.: S.I. Bumshteyn, Engineer; Ed. of Publishing House: S. I.
Vinogradskaya; Tech. Ed.: V.P. Rozhin; Managing Ed.: A.S.
Zaymovskaya, Engineer.

PURPOSE: This book is intended for scientific workers and
engineers engaged in designing combustion chambers of gas-
turbine engines, and also for students in advanced courses
in this general field.

Card 1/6

PHASE I BOOK EXPLOITATION

SOV/4801

Markov, N.I., and V.I. Bakulev

Raschet vysotno-skorostnykh kharakteristik turboreaktivnykh dvigateley (Calculating the Altitude and Velocity Characteristics of Turbojet Engines) Moscow, Oborongiz, 1960. 79 p. 4,750 copies printed.

Ed.: I.L. Yanovskiy, Engineer; Managing Ed.: A.S. Zaymovskaya, Engineer; Ed. of Publishing House: M.S. Anikina; Tech. Ed.: V.I. Oreshkina.

PURPOSE: This textbook is intended for students of senior courses and for graduate students specializing in aviation turbojet engines. It may also be useful to workers of design bureaus and industrial establishments.

COVERAGE: The book deals with heat calculations of turbojet engines and with the calculation of altitude and speed characteristics of turbojet engines according to component characteristics. Theory is briefly described and basic equations are given for the calculations. Various regulating and reheating methods are discussed. The method of formation of the line of simultaneous operation of compressor and turbine is worked out in detail. A method for calculating altitude and speed characteristics is given. In this method various types of engine regulation are taken under consideration. A simplified method for cal-

Card 1/9

SOV/4801

Calculating the Altitude (Cont.)

Calculating altitude and speed characteristics is mentioned. Examples of the characteristics of compressors for various pressures are included along with tables and nomograms for computing fuel consumption. Both Soviet and non-Soviet sources were used. N.I. Markov wrote Chs. I and II; V.I. Bakulev wrote Ch. IV; the others were written jointly. No personalities are mentioned. There are 5 references, all Soviet.

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2. On regulating aircraft diffusers	

Card 2/3

MARKOV, N.I. (Leningrad, Lesnoy pr., d.4, kv.71)

Late results of pneumonectomy in tuberculosis [with summary in
English]. Vest.khir. 82 no.1:76-86 Ja '59. (MIRA 12:2)

1. Iz gosptal'noy khirurgicheskoy kliniki No.1 (nach. - prof.
I.S. Kolesnikov) Voenno-meditsinskoy ordena Lenina akademii imeni
S.M. Kirova.

(PNEUMONECTOMY, in various dis.
pulm. tuberc., remote results (Rus))

MARKOV, N.I. (Leningrad, K-9, Lesnoy pr., d.4, kv.71)

Indications and contraindications for pulmonary resection in
some forms of pulmonary tuberculosis. Vest.khir. 89 no.9:3-10
S '62. (MIRA 15:12)

1. Iz 1-y gosptal'noy khirurgicheskoy kliniki (nachal'nik -
prof.I.S.Kolesnikov) Voenno-meditsinskoy ordena Lenina
akademii imeni S.M.Kirova.
(TUBERCULOSIS) (LUNGS—SURGERY)

MARKOV, N.I.

Significance of early surgical interventions in the treatment of
pulmonary tuberculosis by lung resection. Sovet. med. 26 no.5:
54-60 My'63 (MIRA 17:1)

1. Iz gosspital'noy khirurgicheskoy kliniki (nachal'nik - prof.
I.S.Kolesnikov) Voenno-meditsinskoy ordena Lenina akademii
imeni S.M. Kirova.

ANTONOV, S.N., inzh.; SHCHERBAKOV, V.V., inzh.; MARKOV, N.I., tekhnik

Manufacture of welded diaphragms. [Trudy] LKZ no. 11:299-314 '64.
(MIRA 17:12)

MARKOV, N. M.

1A 12T47

USSR/Boundary Layer
Turbines, Steam

Apr 1947

"Experimental Study of the Boundary Layer in the
Reaction Turbine Passage," N. M. Markov, 6 pp

"Kotloturbostroyeniye" No 2

A brief report on the first graphs obtained of speed
in cross sections of a boundary layer on turbine
vanes. The possibility is demonstrated of calculat-
ing, not only the boundary layer, but also the pro-
file losses with continuous action of the vanes.
Fully illustrated with graphs and diagrams.

12T47

MARKOV, N. M.

USSR/Engineering

Jan/Feb 48

Turbines, Steam

Turbines, Blades

"Calculation of the Boundary Layer of Guide Vanes of Steam Turbines," N. M. Markov, Cand Tech Sci, Leningrad, Ord of Lenin, Metallic Works imeni Stalin, 6 pp

"Kotloturbostroy" No 1

Discusses methods for calculating boundary layer in reaction turbine channels and results of calculations on boundary layer as well as profile losses connected with boundary layer.

1/49736

PA 37/49T26

USSR/Engineering
Turbines, Steam
Mathematics - Applied

Jul/Aug 48

"Calculating Profile Losses in Jet-Activated
Turbine and Compressor Screens," N. M. Markov,
Cand Tech Sci, Gen Sci Res Boiler and Turbine
Inst, Invent I. I. Polzunov, 4 1/2 pp

"Kotloburostroy" No 4

Gives procedure to calculate profile losses of re-
action lattice of any type (confuser-turbine or
diffuser-compressor) taking compressibility of the
working substance into account. Obtains design

37/49T26

USSR/Engineering (Contd)

Jul/Aug 48

formulas depending on arbitrary thicknesses of the
boundary layer in the outlet section of the lat-
tice. Values of these thicknesses can be deter-
mined by estimating boundary layers (this involves
knowing velocity/pressure distribution along sur-
face of blade) or by analytical calculation, if
lattice is used for which solution exists, or --
in the general case -- by the electrohydrodynamic
analogy method with subsequent calculation of
compressibility. Includes five diagrams.

MARKOV, N. M.

37/49T26

FA 77T18

MARKOV, N. M.

USSR/Engineering
Turbines
Mathematics, Applied

May 1948

"The Computation of Profile Losses of Reaction Turbines and Compressor Grids During the Continuous Flow Past Them of a Gas," N. M. Markov, Gen Sci Res Turbine and Boiler Inst imeni I. I. Polzunov, 4 pp

"Dok Ak Nauk SSSR" Vol LX, No 4

Defines coefficient of loss and obtains following expression for it:

$$\zeta_v = \frac{E_v}{E_{adia}} = \frac{c_{00} \sum H^{***} U^3 \delta^{**}}{(c_{00} \sum H^* U \delta^{**}) c_0^2} \cdot$$

Submitted 5 Sep 1947.

77T18

MARKOV, N. M.

PA 165T83

USSR/Physics - Turbines
Hydrodynamics

11 Mar 50

"Spatial Flow of a Fluid in Directing and Rotating
Turbine Grills Placed in Series," N. M. Markov

"Dok Ak Nauk SSSR" Vol LXXI, No 2, pp 245-248

Establishes equation describing twist of velocity pro-
file in three-dimension bounded layer on turbine
vanes. Submitted 13 Jan 50 by Acad A. I. Nekrasov.

165T83

(MARKOV, N.M., kand.tekhn.nauk

Effect of the degree of reactivity on the characteristics of
a pressure stage with partial supply of the working medium.

Izv. vys. ucheb. zav.; energ. 3 no. 7:56-67 J1 '60.

(MIRA 13:8)

1. TSentral'nyy kotloturbinnyy institut imeni I.I. Polzunova.
Predstavlena nauchno-tekhnicheskoy seksiey turbomashin Uchenogo
soveta TSentral'nogo kotloturbinного instituta.
(Steam turbines)

MARKOV, N. M.

USSR/Engineering - Turbines
Tip Losses

1 Jul 50

166716

"Problem of End Losses in Stationary Turbine Cascades," N. M. Markov, Cen Sci Res Steam Turbine Instiment I. I. Polzunov

"Dok Ak Nauk SSSR" Vol LXXIII, No 1, pp 3/-40

Analyzes flow past cascade of turbine buckets bounded by shroud rings. Shows that in boundary layer at shroud surfaces velocity profile is twisted. Gives equation for twist. On basis of determined flow, problem of tip losses is

166716

USSR/Engineering - Turbines (Contd) 1 Jul 50

reduced to calculation of boundary layer on shroud surfaces. Submitted 6 May 50 by Acad A. I. Nekrasov.

166716

MARKOV, N. M.

"Calculation of Aerodynamic Characteristics of a Plane Profile Grid in Axial Turbines." M. SHGIZ (1952)

MARKOV, Nikolay Mikhaylovich; DUAN, N.I., kandidat tekhnicheskikh nauk, redaktor; GOPMAN, Ye.K., redaktor; PATRASHEV, A.B., professor, doktor tekhnicheskikh nauk, retsenzent; SOKOLOVA, L.V., tekhnicheskiiy redaktor

[Computing the aerodynamic characteristics of blade sets in turbomachines] Raschet aerodinamicheskikh kharakteristik lopatochnogo apparata turbomashin. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry, 1955. 162 p. (MIRA 9:2)
(Turbomachines)

ZHUKOVSKIY, V.S., doktor tekhnicheskikh nauk, professor; ZHUKOVSKIY, M.I., kandidat tekhnicheskikh nauk; ZYSINA-MOLOZHEN, kandidat tekhnicheskikh nauk; MARKOV, N.M., kandidat tekhnicheskikh nauk; SKNAR', E.A., kandidat tekhnicheskikh nauk; TYRYSHKIN, V.G., kandidat tekhnicheskikh nauk

M.E.Deich's book "Technical gas dynamics." Reviewed by V.S.Zhukovskii and others. Teploenergetika 2 no.1:62-64 Ja '55.
(MIRA 8:9)

(Turbines--Fluid dynamics) (Gas flow) (Deich, M.E.)

VARLAMOV, N.S., kandidat tekhnicheskikh nauk; MARKOV, N.M., kandidat tekhnicheskikh nauk.

Some results of the experimental investigation of turbine stages. Sudostroenie 22 no.8:7-10 Ag '56. (MLRA 9:10)

(Steam turbines--Testing)

MARKOV, N. M.

"Machinery in Calculating Discovering Unused Productive Capacities."

Determining Productive Capacities in Machinery Manufacturing) Moscow, Mashiniz, 1957.
185 pp.

AUTHOR: Markov, N.M. and Matveyev, G.A., Candidates of Technical Sciences.³⁰¹

TITLE: On determining the flow rate of the operating medium through the ring (cascade) of turbine blades (K voprosu ob opredelenii raskhoda pabochego beshchestva cherez venets (reshetku) turbinnykh lopatok.)

PERIODICAL: "Energomashinostroyeniye" (Power Machinery Construction) 1957, No. 2, pp. 14 - 15, (U.S.S.R.)

ABSTRACT: Existing methods are reviewed and a new method is proposed, which is based on utilising the epures of the pressure (speed) distribution along the contour of the profile. The increasing initial steam parameters bring about a considerable decrease of the flow surfaces in the first stages of the turbines and lead to a reduction of the height of the blades in these turbines and, thus, to a decrease in the efficiency owing to the increase of the relative importance of the end losses. For reducing their influence, blades with small outflow angles (8 to 11°) of the stream are used. It is shown that, for such cascades, utilisation of experimental data of the outflow angles of the flow may lead to considerable errors in determining the rate of flow of the operating medium. Modern, experimental, aerodynamic methods enable determination of the outflow angle of the flow with an accuracy of $\pm 1\%$ and for such accuracy, the error in determining the rate of flow of the operating medium for small outflow angles may reach

On determining the flow rate of the operating medium ³⁰¹ through
the ring (cascade) of turbine blades. (Cont.)

10 - 14%. The here described method enables a more accurate
determination and is partly based on utilising the loss
coefficient, which can be determined in wind tunnels with an
accuracy of about 3%; for such an accuracy, the factor
entering in the relevant equation will not exceed 0.01; for
a value of 0.03, of this coefficient of 0.03.
1 figure. 1 Russian reference.

25(2)

PHASE I BOOK EXPLOITATION

SCV, 13:2

, Markov, Nikolay Mikhaylovich

Issledovaniya protokhnoy chasty turbin (Investigations of Turbine Flow-passages) Moscow, Mashgiz, 1958. 126 p. 2,000 copies printed.

Reviewer: Kamnev, G.F., Candidate of Technical Sciences; Ed.: Serdyukov, S.A.; Engineer; Ed. of Publishing House: Gofman, Ye.K.; Tech. Ed.: Sokolova, L.V.; Managing Ed. for Literature on the Design and Operation of Machines (Leningrad Division, Mashgiz): Petisov, F.I., Engineer.

PURPOSE: This book is intended for engineering, scientific and technical personnel dealing with the design, investigation and testing of turbines. It may also be used by mechanical engineering students.

Card 1/5

Investigations of Turbine (Cont.)

SOV/1332

COVERAGE: The author briefly discusses basic problems connected with the experimental investigation of steam and gas turbine flow-passages and the direct application of experimental data in the design of turbines. Results of investigations are generalized and basic principles of modern methods of determining aerodynamic characteristics of turbine flow-passages are presented. No personalities are mentioned. There are 74 references, 60 of which are Soviet, 7 English, 5 German, 1 French, and 1 Czech.

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SOV/1332

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Investigations of Turbine (Cont.)

SOV/1332

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AVAILABLE: Library of Congress	
Card 5/5	GO/lsb 3-23-59

MARKOV, N.M., kand.tekhn.nauk

Decreasing the width of directing blades of high-pressure steam
turbines. Energomashinostroenie 4 no.7:29-31 J1 '58. (MIRA 11:10)
(Steam turbines)

8(6)


SOV/143-59-11-10/19

AUTHOR: Markov, N.M., Candidate of Technical Sciences

TITLE: The Problem of the Influence of Reynolds Number¹ on the Economic Design of the Blade Sets in Steam and Gas Turbines

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Energetika, 1959, Nr 11, pp 74-82 (USSR)

ABSTRACT: The author is dissatisfied with the fact that the calculations and the results of the experiments regarding the effect of Reynolds number on the economic design of the blade systems in steam and gas turbines are not in sufficient accordance. He suggests new, improved variants of old formulas to bring the calculations closer to the results of the experiments (formulas 1 and 2). The experiments concerning the effect of Reynolds number on the aerodynamic characteristics of the guiding and running blade sets under static conditions have been carried out



Card 1/3

SOV/143-59-11-10/19

The Problem of the Influence of Reynolds Number on the Economic
Design of the Blade Sets in Steam and Gas Turbines

by N.A. Sknar', Ye.A. Gukasova and V.A. Mikhaylova
at TsKTI. The results are represented in Figure
2. The experiments have demonstrated that the limit
of the substantial influence of Reynolds number
depends on the type of the blade sets, and, in active
blade sets, also on the direction of the stream at
the input. Practical quantitative evaluation of the
effect of Reynolds number, both within the range of
its strong as well as its weak influence, both for
blades with infinitely thin rear edges and those with
a finite thickness of rear edges, are taken into
consideration. The second section of the article
analyzes the dependence of the efficiency of a tur-
bine stage on Reynolds number. The results of the
experiments carried out by the author are shown in
Fig 3. The results of the author's calculations can
be compared with the results of the experiments
(Fig 4). The comparison is satisfactory. The ex-
periments were conducted with an experimental turbine.

Card 2/3

67128

SOV/143-59-11-10/19

The Problem of the Influence of Reynolds Number on the Economic
Design of the Blade Sets in Steam and Gas Turbines

The examined stage had cylindrical blades. The air served as a driving force. Geometrical parameters of the entire blade system are shown in Table 1. The calculations of the author are said to be in satisfactory accordance with the experiments conducted by F. Slepicka [Ref 3] and V.G. Tyryshkin [Ref 2]. There are 2 graphs, 2 sets of graphs, 1 table, and 3 references, 2 of which are Soviet, 1 Czech. ✓

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut imeni I.I. Polzunova (TsKTI) (Central Boiler and Turbine Institute imeni I.I. Polzunov)

SUBMITTED: July 6, 1959

Card 3/3

MARKOV, N.M., kand.tekhn.nauk

Studying the effect of surface roughness of turbine vanes.
Izv.vys.ucheb.zav.; energ. 3 no.5:108-117 My '60.
(MIRA 13:6)

1. Tsentral'nyy kotloturbinnyy institut imeni I.I.Polzunova.
Predstavlena nauchno-tekhnicheskoy sektiyei turbomashin
Uchenogo Soveta.
(Turbines--Blades)

S/143/60/000/007/002/010
A189/A029

AUTHOR: Markov, N.M., Candidate of Technical Sciences

TITLE: The Effect of the Degree of Reactivity Upon the Characteristics of Pressure Stages With a Partial Feed of Work Medium

PERIODICAL: Energetika, 1960, Vol 3, Nr 7, pp 56-67

TEXT: The effect of the degree of reactivity of the vane assembly upon the characteristics of pressure stages in steam turbines with a partial feed is tested and analyzed. The results indicate that the stage efficiency depends on the degree of reactivity of the vane assembly. The highest efficiency of the stage with a partial feed is obtained with a slightly positive degree of reactivity upon the medium radius of the vane assembly. A considerable positive degree, as well as a negative one, of reactivity leads to the decrease of the stage efficiency. There are 20 graphs, 3 tables, 1 drawing, and 1 Soviet reference.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut imeni I.I. Polzunova

Card 1/2

S/143/60/000/007/002/010
A189/A029

The Effect of the Degree of Reactivity Upon the Characteristics of
Pressure Stages With a Partial Feed of Work Medium

(Central Institute for Boilers and Turbines imeni I.I.
Polzunov); Nauchno-tekhnicheskaya sektsiya turbomashin
Uchenogo soveta TSKTI (Scientific and Technical Turbomachine
Section of the Scientific Council of TSKTI)

SUBMITTED: January 8, 1960

Card 2/2

MARKOV, N.M., kand.tekhn.nauk; DOBROKHOTOV, V.D., inzh.

Results of investigation of velocity stages. Energomashinostroenie
6 no.5:21-23 My '60. (MIRA 13:9)

(Steam turbines)

PHASE I BOOK EXPLOITATION

SOV/5847

Matveyev, Gavriil Alekseyevich, Georgiy Fedorovich Kamnev, Nikolay Mikhaylovich Markov, Vadim Sergeyevich Yelizarov

Aerodinamika protochnoy chasti sudovykh turbin (Aerodynamics of the Gas-Flow Section of Ship Turbines) Leningrad, Sudpromgiz, 1961. 362 p. 2750 copies printed.

Reviewers: A. A. Moiseyev, Professor, Doctor of Technical Sciences, Honored Scientist and Technologist of the RSFSR, A. N. Patrashev, Professor, Doctor of Technical Sciences; Scientific Ed.: S. A. Serdyukov; Ed.: Z. V. Vlasova; Tech. Ed.: L. M. Shishkova.

PURPOSE: This book is intended for designers and research workers in shipbuilding. It may also be useful to students taking courses in shipbuilding and power machine building in schools of higher education.

COVERAGE: The book deals with the most common methods of aerodynamic investigation of the blade apparatus of ship turbines and gives the results of these investigations. Practical recommendations on the design

Card ~~148~~

SOV/5847

Aerodynamics of the Gas-Flow (Cont.)

and heat computation of subsonic and supersonic blade apparatus are also given. Sections 4-6 of Ch. II, Sec. 10-11 of Ch. III, Sec. 13-14 of Ch. IV, Sec. 16-17 of Ch. V, Sec. 18, 20 of Ch. VI, Sec. 23 of Ch. VII, Sec. 29-31 of Ch. VIII, Sec. 34-37 of Ch. IX, and Sec. 39-40 of Ch. X were written by G. A. Matveyev; Sec. 5 of Ch. II, Sec. 25 of Ch. VII by G. F. Kamnev; Sec. 1-3 of Ch. I, Sec. 7 of Ch. II, Sec. 11-12 of Ch. IV, Sec. 19 of Ch. VI, Sec. 24, 27 of Ch. VII, and Sec. 33, 38 of Ch. IX by N. M. Markov; Sec. 8 of Ch. II, Sec. 15 of Ch. IV, and Sec. 26 of Ch. VII by V. S. Yelizarov; Sec. 21-22 of Ch. VI by G. F. Kamnev; Sec. 9 of Ch. III, and Sec. 28, 32 of Ch. VIII by G. A. Matveyev and G. F. Kamnev. No personalities are mentioned. There are 47 references: 41 Soviet (including 3 translations), 5 English, and 1 French.

TABLE OF CONTENTS:

Introduction

Conventional Symbols for Basic Values

Card 2/7

3

6

20370

5/114/61/000/004/006/006
E194/E435

26.2120

AUTHOR:

Markov, N.M., Candidate of Technical Sciences

TITLE:

The Influence of the Reynolds Number on the
Characteristics of Turbine Stages With Various Degrees
of Reaction

PERIODICAL: Energomashinostroyeniye, 1961, No.4, pp.41-42

TEXT: Laboratory studies of blading are being ever more widely used in turbine designs. Until recently, because of the limited possibilities of rig tests, the test results were obtained over a comparatively narrow range of Reynolds numbers. In particular for investigations on stages in experimental turbines, the values of Reynolds number for the nozzles were usually $2-3 \times 10^5$ and rarely exceeded 4×10^5 . Until quite recently it was, without proper basis, assumed that in the region of Reynolds numbers of $1.5-2 \times 10^5$ the characteristics of turbine stages remained practically constant. Recent work of the TsKTI did not confirm this and showed that even in the range of considerably greater values of Reynolds number the stage efficiency varies by quite a large amount which cannot be neglected in the calculations.

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S/114/61/000/004/006/006
E194/E435

The Influence of ...

This article briefly describes the results of tests carried out in the TsKTI on the influence of Reynolds number on stage pressure characteristics. Tests were made on four stages with various degrees of reaction. The mean diameter of the blades was 600 mm, the height of the nozzle blades was 20 mm, the relative height of the blades in the nozzles was 0.037 and in the runner 1.15. The Reynolds numbers were altered by altering the parameters of the working medium at the inlet to the experimental turbines. The tests were made with air. Fig.1 shows typical curves of stage efficiency for various values of Reynolds number, taking the curves from top to bottom these are: 8×10^5 , 6.7×10^5 , 5.9×10^5 , 5×10^5 and 4.1×10^5 . These results relate to the fourth stage having a small negative reaction. Fig.2 shows generalized experimental results of the influence of the Reynolds number on the efficiency of all the stages tested. The efficiency is plotted on the ordinate for the optimum velocity ratio and the Reynolds number on the abscissus. Calculated values of the efficiency changes in the first and fourth stages are plotted by dotted lines, the calculations were made by a

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E194/E435

The Influence of ...

procedure developed in the TsKTI. It will be seen that Reynolds number ceased to have much effect at much higher values than were previously supposed, namely $7 - 8 \times 10^5$. There is satisfactory agreement between the theoretical and experimental values. Particular attention was paid to studying the influence of change in Reynolds number on the reaction of the blading. It was found that reduction in the heat drop in the stage and consequently in the Reynolds number causes some reduction in the reaction. Consequently, in the region where the Reynolds number has an influence on the efficiency, its influence depends on the degree of reaction of the blading. There are 3 figures and 2 tables and 2 Soviet references.

Table 1.

Notation Обозначение	№ ступени (Stage Nos.)			
	1	2	3	4
R	0.219	0.106	0.082	-0.017

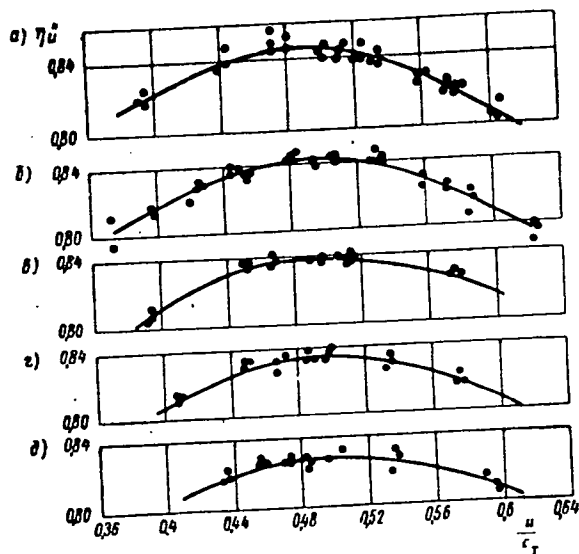
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S/114/61/000/004/006/006
E194/E435

The Influence of ...

Fig.1.



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The Influence of ...

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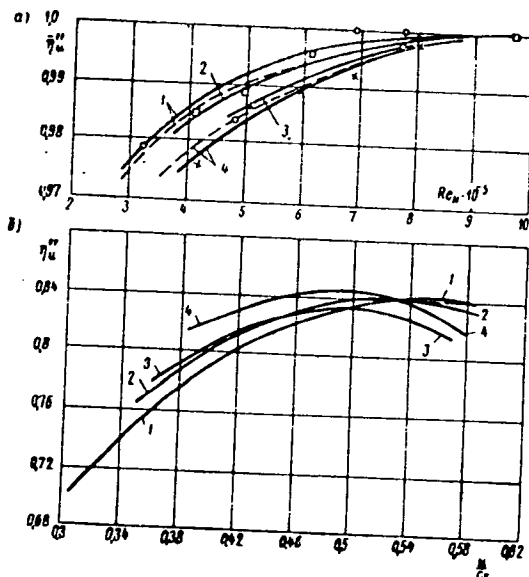


Fig.2.

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35332
S. 143.61/000 012-004-000
D229/D306

26.2/20
AUTHORS: Markov, N.M., Candidate of Technical Sciences and
Terent'yev I.K., Engineer

TITLE: Ventilation losses of a turbine body due to pressure
gradient in the rim blades

PERIODICAL: Izvestiya vysshih inzhnirskikh zavedeniy Energetika
no 12, 1961, 55 - 59

TEXT: The results are given of an experimental study of the influence of a pressure gradient in the rim blades on the magnitude of ventilation losses. An experimental turbine was used. The experimental error in determining the ventilation losses N_B did not exceed 3 %. Two turbine wheels of mean diameter 600 mm and blade height 23 mm, were investigated. The results of the experiments are shown in two figures. It was found that the presence of a considerable pressure-gradient on the inactive part of the turbine wheel leads to a substantial increase in ventilation losses. The magnitude of the ventilation losses, due to the pressure gradient, can be

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33332

S/143/61/000/012/004/005

D299/D305

Ventilation losses of a turbine ...

The experimental curve for $\varphi_{H D}^*$ is shown in a figure. The velocity $(w_2 H D)_0$, entering expression (2), is calculated from the pressure gradient at the inactive part of the wheel, the pressure gradient itself is determined from the discharge-balance equation. The quantity N_B , entering expression (2), equals the ventilation losses for $\Delta p = 0$, and can be estimated by means of well-known formulas, such as

$$N_B = K(1 - \varepsilon) l_p D^2 \gamma \left(\frac{n}{1000} \right)^3 \text{ (kw)}. \quad (3)$$

The calculated values for the ventilation losses are in good agreement with the experimental results. There are 6 figures, 1 table and 3 Soviet-bloc references.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut imeni I. I. Polzunova (Central Boiler and Turbine Institute named I. I. Polzunov)

PRESENTED: by Turbinnyaya sektsiya nauchno-tekhnicheskogo Soveta (Turbine Department of the Scientific-and-Technical Council)

Card 3/4

Ventilation losses of a turbine ...

SUBMITTED: October 18, 1960

53332

S/143/61/000/012/004/001
D299/D305

✓

Card 4/4

S/114/62/000/008/006/006
E194/E455

AUTHOR: Markov, N.M.. Candidate of Technical Sciences
TITLE: The influence of the distribution of heat drop between
the rows on the efficiency of velocity regulating
stages

PERIODICAL: Energomashinostroyeniye, no.8, 1962, 39-40

TEXT: In the TsKTI, the influence of the distribution of heat drops between the rows of regulating velocity stages on the stage efficiency was studied experimentally, with particular reference to the case of partial delivery. The losses associated with the partial delivery are particularly affected by the degree of reaction in the first row of runner blades and in the tests this ranged from 0.15 to -0.04. Four models of velocity stage were tested. The nozzle blading was the same in all cases. The stage reaction distribution was altered by slightly turning the runner and guide vanes. The flow path geometry was the same as that used in previous work (N.M.Markov and V.D.Dobrokhotoy. Energomashinostroyeniye, no.5, 1960). The test results, plotted and tabulated, show that the efficiency of three stages tested

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The influence of the ...

S/114/62/000/008/006/006
E194/E455

with different amounts of positive reaction are about the same with full delivery, though somewhat less than that of the stage with negative reaction. However, the efficiencies are very different with partial delivery, stage type KC-6 (KS-B) being the best. The sources of loss are simply analysed and it is concluded that the lowest loss accompanying partial delivery occurred with small positive reaction at the mean radius of the first stage. It was also found that in stages working with partial delivery under favourable conditions the reaction at the root of the first stage is about zero. There are 2 figures and 2 tables.

Card 2/2

MARKOV, N.M., kand.tekhn.nauk; TERENT'YEV, I.K., kand.tekhn.nauk;
YERMASHOV, N.N., inzh.

Some results of the experimental study of the effect of steam
moisture on the characteristics of turbine stages. Izv. vys. ucheb.
zav.; energ. 6 no.3:68-74 Mr '63. (MIRA 16:5)

1. TSentral'nyy kotloturbinnyy institut imeni I.I.Polzunova.
Predstavlena sektsiyey parovykh i gazovykh turbin.
(Steam turbines)

MARKOV, Nikolay Mikhaylovich; PATRASHEV, A.N., doktor tekhn. nauk, prof.,
zasl. deyatel' nauki i tekhniki RSFSR, retsenzent; MATVEYEV,
G.A., kand. tekhn.nauk, red.; SIMONOVSK IIY, N.Z., red.izd-va;
SPERANSKAYA, O.V., tekhn. red.

[Theory and design of turbine stages] Teoriia i raschet tur-
binnykh stupenel. Moskva, Mashgiz, 1963. 154 p.
(MIRA 16:8)

(Steam turbines)

ZAL'F, G.A.; Prinsipal uchastiye: STUFONITSKIY, N.Z., inzh.;
MARKOV, N.M., doktor tekhn. nauk, prof., retsenzent;
GOPLIN, A.P., doktor tekhn. nauk, retsenzent

[Thermal calculation of steady-flow gas turbines] Teplo-
voi raschet statsionarnykh gazovykh turbin. Moskva, Ma-
shinostroenie, 1964. 306 p. (MIRA 17:12)

MARKOV, N.M., doktor tekhn. nauk, prof.

Selection of the type of the first stage of large steam turbines
with throttle control. Izv. vys. shkol. zav.; energ. 7 no. 12: '66-
62 D '64. (MIRA 12:3)

1. Tsentral'nyy kotloturbinnyy institut imeni I.I. Polzunova.

YERMASHOV, N.N., inzh.; MARKOV, N.M., doktor tekhn. nauk, prof.

Development of instruments for determining the degree of steam
moisture. Izv. vys. ucheb. zav.; energ. 8 no.8:96-100 Ag '65.
(MIRA 18:9)

1. TSentral'nyy kotloturbinnyy institut imeni I.I. Polzunova.

L 21938-66 EWT(d)/EWT(m)/EWP(f)/EWP(c)/EWP(v)/EWP(j)/T/EWP(k)/EWP(l)/ETC(m) ²⁶ RM/RM
 ACC NR: AP6011460 SOURCE CODE: UR/0114/65/000/009/0001/0003

AUTHOR: Markov, N. M. (Doctor of technical sciences; Professor) 51
B

ORG: none

TITLE: Developmental prospects of steam-turbine building in the USSR and the directions of scientific research in this field [The paper was presented at the Plenum of the Steam and Gas Turbine Section of the Central Scientific Technological Society of the Power Industry, held in April 1965.]

SOURCE: Energomashinostroyeniye, no. 9, 1965, 1-3

TOPIC TAGS: steam turbine, heat exchanger/K-200-130 steam turbine, k-160-130 steam turbine, K-300-240 steam turbine

ABSTRACT: The state and prospects of the development of Soviet-steam-turbine building are such that by now the production of several new types of high-capacity steam turbines (K-200-130, K-160-130, K-300-240, and others) has been organized. In addition new 500- and 800-Mw steam-turbine types are currently being designed and built. Their design and efficiency are being further improved. At present the fuel consumption per generated kwh in the USSR, however, is still higher than in, for example, the United States and France, precisely because the proportion of steam-turbine units with high initial steam parameters that exists at present in the Soviet power stations is still much too low. At present promising single-shaft 800-MW units and double-

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UDC: 621.165.004.17

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ACC NR: AP6011460

shaft ~ 1000MW units with double steam reheat are being developed. Considering the extremely ambitious planned growth rate of installed capacity, which can be implemented only by introducing high-capacity units, as well as the need to comprehensively test the models of new units before starting their serial production for power stations, the work to develop new high-capacity units must be accelerated. One of the promising paths of increasing the operating economy of equipment and reducing the unit fuel consumption in power systems is, as is known, the introduction of steam-gas units with a high-pressure steam generator. The first gas and fuel oil burning steam-gas units already are in operation. Design and development work on a steam-gas unit with discharge of gas into the boiler, operable on both liquid and solid fuel, has been commenced. A unit of this kind, compared with, e.g. the K-300-240 steam turbine, would produce fuel savings of 3-4% and reduce capital expenditures by 5-8%. At present, in the work to design new single-shaft high-capacity steam turbines, considerable attention is paid to reducing their longitudinal dimensions, with the object of, on the one hand, reducing the capital expenditures per kwh of installed capacity and, on the other, reducing the metal requirement. It is believed that the plants manufacturing

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ACC NR: AP6014460

steam turbines of similar capacities should also compete with one another as regards reducing the metal expenditures and the longitudinal dimensions of the turbines. Another highly important trend in research and development work is the improvements in the design of the low-pressure cylinders of superhigh-capacity steam turbines and the enhancing of their operating economy by utilizing the vapors of a fluid with a low-boiling point (freon) in turbine low-pressure section, with the vapors being produced in the heat exchanger by the steam coming thence from the medium-pressure cylinder. Owing to the low specific volume of freon, its volume rate of flow in the low-pressure cylinder is only a fraction as high as the volume rate of flow of water vapor. [JPRS]

SUB CODE: 10 / SUBM DATE: none / ORIG REF: 003

Card 3/3 JLR

MARKOV, IV-IV.

CHUDOV, V.A.; MARKOV, N.N.

Remarks on S.I. Pokras' suggestions. Stan. 1 instr. 24 no. 11:16-17 H '53.
(MLRA 6:12)

(Ganges) (Pokras, S.I.)

MARKOV, N.E.

Linear measuring instruments. Izv.tekh. no.5:58-60 S-O '55.
(Measuring instruments) (MLRA 9:1)

AID P - 4218

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 19/20

Author : Markov, N. N.

Title : Measuring Instruments of Foreign Manufacturers

Periodical : Stan. 1 instr., 1, 41-44, Ja 1956

Abstract : Description of foreign-made precision-type measuring-instruments such as inside calipers, height gages, "opticators" made by German manufacturers, and the optical inside calipers made in Switzerland. Eight photos, 2 drawings and 1 table.

Institution : None

Submitted : No date

Subject : USSR/Engineering AID P - 4865
Card 1/1 Pub. 103 - 25/26
Author : Markov, N. N.
Title : Measuring instruments of foreign make
Periodical : Stan. 1 instr., 2, 44-46, P 1956
Abstract : The "Del'tameter" pneumatic apparatus for inspection of parts with a diameter up to 100 mm, manufactured by the Johanson firm in Sweden, and the Minicator, a micron-type apparatus for inspection of parts in difficult-to-reach places made by the same firm, are described. Two photos and 3 drawings.
Institution : None
Submitted : No date

AID P - 4795

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 22/24

Author : N. N. Markov

Title : Measuring apparatuses of foreign make

Periodical : Stan. 1. instr., 3, 41-43, Mr 1956

Abstract : 1) A brief description of an instrument for inspection of microgeometry metal surfaces. It is manufactured by Johanson (Sweden). One photo and 1 drawing. 2) An elaborate optical ruler for inspection of rectilinearity is fully described and illustrated. The device is a product of Huet (France). Four photos, and 1 drawing.

Institution : As above

Submitted : No date

MARKOV, N.N.

Cyclic defects in gears. Izv. tekhn. no. 3:72-75 My-Je '56.
(Gearing--Measurement) (MIRA 9:9)

MARKOV, N.N

AID P - 5381

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 11/28

~~Authors~~ : Semenova, L. M., and N. N. Markov

Title : Device for control of angular pitch

Periodical : Stan. i instr., 9, 28, S 1956

Abstract : The authors provide a description and illustration of the operation of the measuring instrument for the set-up of teeth in gears 40 to 300mm in diameter. One photo and 2 drawings.

Institution : Bureau of Interchangeability of the Ministry of the Machine-Tool and Instrument Industry (MS i IP).

Submitted : No date

MARKOV, N.N.

Measuring instruments manufactured by foreign firms. Stan. 1 instr.
27 no.2:44-46 P '56. (MLRA 9:7)
(Measuring instruments)

MARKOV, N.N.

Measuring instruments manufactured by foreign firms. Stan. 1 instr.
27 no.3:41-43 Mr '56. (MIRA 9:7)
(Measuring instruments)

MARKOV, N. N., Cand Tech Sci -- (diss) "Study of complex ~~math~~
methods of control of straight-^{toothed}~~gear~~ cylindrical gear~~sheet~~."
Mos, 1957. 12 pp with graphs (Min of Higher Education USSR,
Mos Machine Tool and Instrument~~Inst~~ im I. V. Stalin), 110
copies (KL, 52-57, 107)

- 61 -

MARKOV, N.H.

Two-profile method for checking spur gear wheels. Izv. tekhn. no.2:
58-63 Nr-Ap '57. (MLBA 10:6)

(Gearing, Spur),

Markov, N.N.
AUTHOR: Markov, N.N., Engineer,

28-4-7/55

TITLE: The Effect of Pitch Error Revealed in an Overall Check of
Cylindrical Gears (Proyavleniye pogreshnosti osnovnogo shaga
pri kompleksnom kontrole tsilindricheskikh zubchatykh koles)

PERIODICAL: Standartizatsiya, 1957, # 4, pp 27-32 (USSR)

ABSTRACT: The latest standard, GOST 1643-56, for tolerances of gear
transmissions includes norms of kinematic error, i.e. of the
accumulated circular pitch error which is the source of the
noises and taps accompanying the work of a gear transmission.
The author considers the case of cylindrical (spur and narrow
helical) gears only.

The constant pitch error, i.e. the error resulting from
variations in the radius of the tooth profile involute, is
very widespread, and in the standards of some countries, for
instance Germany, it is regulated separately as a part of
profile error. The GOST 1643-56 does not segregate it from
general pitch error and refers to error on one profile, or
one side of tooth only, i.e. for the case of only one rotation
direction in mesh.

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The author makes a theoretical analysis for both the single-

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The Effect of Pitch Error Revealed in an Overall Check of Cylindrical Gears

profile and two-profile cases and finds a difference in the cumulative error obtained. The theoretical derivations were checked by experimental measurements on a modul 4, 25-tooth gear. The mean value of two-profile error on the 25 teeth was 55.68 microns and the difference, as compared to one-profile error, was 0.13 micron, or 0.23%. The elastic deformation of material was not taken into account.

In his conclusions, the author states that the maximum magnitude of jump depends on the pitch error only when the error on both sides of the teeth is equal, and the full radial displacement is equal to the maximum magnitude of the jump. This latter conclusion demonstrates the inconsistency of the two-profile overall check system in cases of large numbers of teeth and large errors, since the reduced jump magnitudes on one tooth, revealed in the process of the test run, are not characteristic of the behaviour of a gear in single-direction work.

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The Effect of Pitch Error Revealed in an Overall Check of Cylindrical Gears 28-4-7/35

There are 8 figures and 3 Russian references.

ASSOCIATION: Bureau of Interchangeability of the Committee of Standards,
Measures and Measuring Devices (Byuro **vzaimozamenyayemosti**
Komiteta standartov, mer i izmeritel'nykh priborov)

AVAILABLE: Library of Congress

Card 3/3

AGAFOHOV, M.S., inzh.; MAHKOV, M.N., inzh.

Conversion of the AK-25-1 turbine to a system with conterpressure.
Elek.sta. 30 no.1:41-43 Ja '59. (MIRA 12:3)
(Steam turbines)

MARKOV, N.N.; ZIMIN, N.I., nauchnyy red.; KUZNETSOVA, M.I., red.izd-vs;
KASHIRIN, A.G., tekhn.red.

[Selecting measuring equipment for checking spur gears; precision of measuring methods] Vybór ismeritel'nykh sredstv dlia kontrolya tsilindricheskikh subchatykh kolez; tochnost' metodov ismereniia. Moskva, Gos.izd-vo standartov, 1960. 139 p.

(MIRA 14:4)

(Gearing, Spur) (Measuring instruments) (Mensuration)

PHASE I BOOK EXPLOITATION

SOV/5062

GIPP, B.A., Yu.M. Gonikberg, M.M. Kaplun, Ye. M. Levenson, N.N. Markov, P.M. Polyanskiy, and G.S. Shlezinger

Kontrol'nyye prispособleniya (Inspection Equipment) Moscow, Mashgiz, 1960. 338 p.
Errata slip inserted. (Series: Progressivnyye sredstva kontrolya razmerov v mashinostroyenii)

Scientific Ed.: Ye. M. Levenson; Ed. of Publishing House: L.G. Prokof'yeva;
Tech. Ed.: A.Ya. Tikhonov; Eds. for the Series: B.S. Bayburov, M.I. Kochenov,
and D.D. Malyy; Managing Ed. for Literature on Chemical- and Textile-Machine
Building: V.I. Rybakova, Engineer.

PURPOSE: This book is intended for designers and technical personnel in the machine-building industry.

COVERAGE: The book discusses in detail the design of basic subassemblies and parts of inspection equipment which have proved valuable in shop practice. Various devices for the inspection of dimensional and nondimensional parameters of parts used in machine building are described. The book is a part of a group of works

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Vysokomayevskiy i tekhnicheskiye issledniye y mashinostroyeni; zhenyovskiy shoril, no. 2 (Interchangeability and Engineering Measurements in Machinery Manufacture; University Collection, No. 2) Moscow, Mashgiz, 1960. 542 p.
Errata slip inserted, 5,000 copies printed.

Ed.: A. I. Tumbler, Doctor of Technical Sciences, Professor; Editorial Council:
A. I. Tumbler (Chairman), Ye. I. Volodin, Docent; Doctor of Technical Sciences, Professor;
Ye. I. Volodin, Docent; M. G. Gerasimov, Doctor of Technical Sciences, Professor;
Ye. I. Volodin, Docent; V. I. Gerasimov, Docent; and O. Ia.
Tumbler (Scientific Secretary).
Editor of Technical Sciences, Professor; Eds.: N. A. Yarov, Doctor
of Technical Sciences, Docent; L. I. Vorontsov, Candidate of Technical Sciences,
Docent; and V. I. Vorontsov, Candidate of Technical Sciences, Docent;
Editor for Literature on Machine and Instrument Construction (Machin):
M. P. Pokrashtin, Engineer; Ed. of Publishing House: G. P. Kochkova; Tech. Ed.:
S. V. Sokolova.

PURPOSE: This collection of articles is intended for scientific and technical personnel dealing with problems of interchangeability and engineering measurements in the machine and instrument industries.

Goberman, B. E. [Candidate of Technical Sciences, Docent]. Solution of Some Problems of Thread Interchangeability With the Theoretical-Probability Method

५

Fishchenko, O.N. (Candidate of Technical Sciences). Calculation of Tolerances for Toothed Gears in Clocks Based on Gear-Cutting Conditions

22

Ushakov, and B.I. Livshits [Candidates of Technical Sciences].

55

Zorab'yev, Yu. A. [Engineer]. Dimensional Tolerances for
Ferrous-Alloy Castings

5

Callisterho, V.O. [Engineer]. Basis for Selecting the Clearance Between Compressor Cylinders and Pistons

5

SECTION II. INDEX

Taylor, D.A. Basic Principles in the Selection of Accuracy of Measuring Devices 202

20

Alvarez, O.A. [Candidate of Technical Sciences]. Specimen analysis of the errors of various gear-machining methods.

Solomon, Is. [Engineer]. Measuring the Kinematic Error of
Isirington Gears

2

Markov, M.N. [Candidate of Technical Sciences]. Master Degree
for ~~Engineering~~ ^{Engineering} Car Inspection

Lopovok, I.S. [Candidate of Technical Sciences, Doctor]. Causes of Geometrical Errors of Cylinders. Machine

Volosky, S.S. [Candidate of Technical Sciences, Doctor]. Methods for Checking Accuracy and Clearances in Rolling-Contact Bearings

5

2/7

MARKOV, N.N., kand.tekhn.nauk

Use of measuring gear wheels in over-all inspections. Vzaim.i
tekhn.izm v mashinostr.; meshvuz.sbor. no.2:286-311 '60.

(MIRA 13:8)

(Gearing--Measurement)

MARKOV, N.N.; PALEY, M.A.

Devices for checking bevel gears. Standartizatsiia 24
no.6:47-51 Je '60. (MIRA 13:7)
(Gearing, Bevel—Testing)
(Measuring instruments—Standards)

MARKOV, N.N., kand.tekhn.nauk

Exposure of errors of spur gear elements by means of a combined
testing. Vzaim.i tekhn. ism.v mashinostr.; meshvus.sbor.
no.3:240-270 '61. (MIRA 14:8)
(Gearing, Spur--Testing)

MARKOV, N.N.; SATSERDOTOV, P.A.

Devices for checking worm gears. Standartizatsiia 25
no.6:51-54 Je '61. (MIRA 14:6)
(Measuring instruments--Standards)

TAYTS, B.A.; MARKOV, N.N.; KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof., red.; KUTAY, A.K., kand. tekhn. nauk, retsenzent; FIRUN, N.B., kand. tekhn. nauk, red.; ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Precision standards and control of gear wheels] Normy tochnosti i kontrol' zubchatykh koles. Pod obshchei red. N.I. Kolchina. Moskva, Mashgiz, 1962. 103 p. (Bibliotekha zuboreza, no.6)

(MIRA 16:2)

(Gearing—Standards)

S/115/62/000/003/001/001
E194/E484

AUTHORS: Kayner, G. B. Markov, N. N. Eydinov, V. Ya.

TITLE: New instruments for linear measurements

PERIODICAL: Izmeritel'naya tekhnika no. 3 1962 6-8

TEXT: This article gives brief details of a number of new measuring instruments. The Leningradskiy instrumental'nyy zavod (Leningrad Instrument Works) has developed a group of spring optical heads with scales of from 0.1 to 5 microns per division with ranges of ± 12 and ± 150 microns respectively. In these instruments a light is projected on to a mirror mounted on a bronze strip spring which reflects the beam on to a scale. Two colour filters are placed between the mirror and scale and their position is adjusted so that the light is coloured red or green if the part inspected is out of tolerance. The drive from the measuring head to the spring is frictionless so that the sensitivity is high, however the instrument is sensitive to vibration and position. The same works has developed small spring type heads with scales of 1 and 2 microns per division and ranges of ± 50 and ± 100 microns. These use a spring mechanism in which

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New instruments for linear

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E194/E484

displacement of the measuring probe is not applied directly to stretch the spring but releases it so that it can travel to the tension of the suspension as a result of this change in the measuring rod are not transmitted to the spring mechanism. This head is not sensitive to position. Clock type micrometers are commonly used for scales of 0.01 mm per division but after the necessary travel is small and this sensitivity is not high enough. Accordingly the "Krasnyy Instrumental shirk" works has developed a special head 2T73 (2GRZ) with a scale of 0.01 mm per division and a range of ± 0.25 mm. The head is not as accurate as the usual head but is of improved construction. The rotating parts are mounted on jewels. However, the standard error of ± 5 microns is too high and they are expensive. The works has used this head in an instrument with electrical contacts that indicate when the limit is reached. Brief details are given. The same works has also developed the former clock type micrometer using a rack and pinion mechanism. A number of constructional improvements are briefly described. The Chelyabinsk instrumentnyy zavod (Chelyabinsk Instrumental Card 2/3

New instruments for linear

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E194/E484

Works) has developed instruments for inspecting gear teeth for waviness, which are briefly described. They can reveal surface irregularities of 1 micron. The "Kalibr" Works has redesigned the former rather unsatisfactory internal gauges. Motion is transmitted from the measuring head to the driving rod by a wedge and ball mechanism which turns the motion through a right angle. The measuring heads can be provided with scales of 0.002 mm per division with a range of ± 0.1 mm they can be used with many types of clock type gauge. The measuring probes are tipped with hard alloy. The error of the new internal gauges does not exceed 5 microns over the whole range of measurement of the head within the range of 0.02 mm the error does not exceed 2 microns. There are 5 figures.

Card 3/3

MARKOV, N.N.; PALEY, M.A.

Results of the standardization of toothed transmissions. Standarti-
zatsiia 26 no.1:18-20 Ja '62. (MIRA 15:1)
(Gearing--Standards)

MARKOV, N.N.; KUPERMAN, B.M.

Design of electric contact transducers used in machinery manufacture.
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